

### REMARKS

Claims 22 – 25, 27 – 40 and 42 – 47 are pending in the present application. Claims 26 and 41 were previously canceled without prejudice or disclaimer.

Claims 22 – 25, 27 – 40 and 42 – 47 have been amended to place them in proper U.S. form. Support for these claims as amended is found throughout the specification, claims and figures as originally filed. No new matter has been added.

By amending any claims herein and/or canceling any claims, Applicant makes no admission as to the validity of any rejection made by the Examiner against any of these claims. Applicant reserves the right to reassert any of the claims canceled herein or the original claim scope of any claim amended herein, in a continuing application.

The amendments to claims 22, 35 and 39 are made to correct informalities. Support for these corrections is found originally filed Fig. 6 as well as throughout the originally filed specification. Therefore, Applicant no new matter is submitted in this paper.

In view of the following, further and favorable consideration is respectfully requested.

- I. At page 2 of the Official Action, the Examiner rejected claims 22 – 25, 20, 31, 32, 39, 40, 42, 45 and 47 under 35 USC § 103(a) as being unpatentable over Applicant's Disclosure of the Prior Art in view of Japanese Reference No. 62171515 to Yoshihiro and further in view of U.S. Patent No. 6,439,477 to Sweet et al.***

The Examiner rejected claims 22 – 25, 20, 31, 32, 39, 40, 42, 45 and 47 under 35 USC § 103(a) as being unpatentable over Applicant's Disclosure of the Prior Art in view of Japanese Reference No. 62171515 to Yoshihiro and further in view of U.S. Patent No. 6,439,477 to Sweet et al. In view of the following, this rejection is respectfully traversed. To establish a *prima facie* case of obviousness, the Examiner must establish: (1) some

suggestion or motivation to modify the references exists; (2) a reasonable expectation of success; and (3) the prior art references teach or suggest all of the claim features. *Amgen, Inc. v. Chugai Pharm. Co.*, 18 USPQ2d 1016, 1023 (Fed. Cir. 1991); *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988); *In re Wilson*, 165 USPQ 494, 496 (CCPA 1970).

Applicant respectfully submits that a proper case of *prima facie* obviousness has not been established because Applicant's Disclosure of the Prior Art (hereinafter referred to as "the disclosed prior art"), Japanese Reference No. 62171515 to Yoshihiro (hereinafter referred to as "the Yoshihiro reference"), and U.S. Patent No. 6,439,477 to Sweet et al. (hereinafter referred to as "the Sweet et al. patent") do not disclose all of the elements of the presently claimed subject matter. As required by *In re Wilson*, to establish a *prima facie* case of obviousness, the Examiner must establish that some suggestion or motivation to modify the references exists and that the prior art references teach or suggest all of the claim features. *Amgen, Inc. v. Chugai Pharm. Co.*, 18 USPQ2d 1016, 1023 (Fed. Cir. 1991); *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988); *In re Wilson*, 165 USPQ 494, 496 (CCPA 1970).

Independent claim 22 recites "[a] rotary sprinkler comprising a rotor with an axle having a tip, and a thrust bearing with a socket for receiving for rotation the axle, the socket having a bottom that, during operation of the rotary sprinkler, abuts the tip of the axle in a contact zone, wherein the sprinkler further comprises a hard element constituting at least a part of the bottom including the contact zone, the element comprising a harder material than the tip, wherein the hard element has a concave surface in the contact zone." And Independent claim 39 recites: "[a] hard element for use in a rotary sprinkler comprising a rotor with an axle having a tip, and a thrust bearing with a socket for receiving for rotation the axle, the socket having a bottom that abuts the tip of the axle during operation of the rotary sprinkler, the hard element being fixed in

the bottom, comprising a harder material than the tip, and having a contact surface for engaging the tip, wherein the contact surface is concave.”

Applicant first notes that there is no motivation to combine the Sweet et al. patent with the Yoshihiro reference. The Sweet et al. patent describes a tilter post 240 that has a hard tipped surface and a lower spool component 232 having a softer material than that of the tilter post. The Examiner cited the Yoshihiro reference to show that the spool component of the Sweet et al. patent can be harder than the material of the tilter post. However, there is no motivation to combine these references and combination of these references renders the device disclosed in the Sweet et al. patent inoperable for its intended purpose. *See Manual of Patent Examining Procedure §2143.01(v)* (If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. (*citing In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984))). The Sweet et al. patent describes that the “arrangement [of the lower spool component 232 and the post 240] provides the required instability with respect to the post to insure an off-center orientation of the rotor plate 214 when at rest.” The Sweet et al. patent describes a preferred material for the tilter post 240 being stainless steel and the preferred material for the bearing component 232 being brass. *The Sweet et al. Patent* at col. 6, line 51 – col. 7, line 25. Applicant submits that in order to achieve the aim of the Sweet et al. patent, the post 240 **must** be made of a material, such as stainless steel, which is **a harder** material than brass. Thus, there is no motivation to combine the Sweet et al. patent with the Yoshihiro reference as such a combination would make the device disclosed in the Sweet et al. patent inoperable for its intended purpose of *instability*. *See MPEP §2143.01(v)*.

Further, in contrast to the presently claimed subject matter, the cited prior art does not

disclose, teach or suggest "a socket for receiving for rotation the axle, the socket having a bottom that, during operation of the rotary sprinkler, abuts the tip of the axle" as recited in independent claim 22 and as similarly recited in independent claim 39. The Examiner indicated that "Sweet et al. discloses an axle (240) which abuts a hard element (232) having a concave surface (at 238; see Figure 8) for the purpose of reducing vibration while rotating." *Emphasis added.* The Sweet et al. patent discloses (in all of the embodiments) a wobbling sprinkler that has a rotor plate that may rest upon an "axle" when not in use. In some embodiments, this 'axle' is defined as a tilter button 36 (see column 4 line 10 of the Sweet et al. patent). When water is supplied to the sprinkler and rotation of the plate starts, the 'axle' and plate are described in all the embodiments as being ***separate one from the other to minimize wear*** (see column 4, lines 15 to 25 of the Sweet et al. patent). Therefore, the Sweet et al. patent does not disclose a socket for receiving for rotation the axle, the socket having a bottom that *abuts* the tip of the axle," as presently claimed. In fact, the Sweet et al. patent actually teaches away from this feature.

Furthermore, the Examiner asserts that the sprinkler of the Sweet et al. patent is provided with bearing elements 246, 248, which are described as being constructed of wear-resistant material (see e.g., column 6, line 66 to column 7, line 7). Thus, once rotation starts, axle (240) and element (232) become separated and any abutment during rotation will occur at other locations such as at bearing elements 246, 248. As a result, Applicant submits that the Sweet et al. patent fails to disclose an axle and socket that rotate while abutting ***each other*** as recited in present claims 22 and 39.

In further contrast to the presently claimed subject matter, the cited prior art does not disclose, teach or suggest "a hard element constituting at least a part of the bottom including

the contact zone, the element comprising a harder material than the tip" as recited in present claim 22 and as similarly recited in present claim 39. Applicant notes that in the embodiment referred to by the Examiner, the lower spool bearing component 232 at column 6, lines 50 – 51 of the Sweet et al. patent is described as "preferably [being] constructed of brass (or other similarly weighted material)" and that axle 240 is defined at column 7, lines 19 – 25 of the Sweet et al. patent as being made of stainless steel. Notably, stainless steel is a harder material than brass and therefore axle 240 in sweet is made of a harder material than element 232. Thus, the Sweet et al. patent ***teaches away*** from the structure recited in present claims 22 and 39, since the Sweet et al. patent would lead the skilled artisan in a direction different from that taken by the Applicant.

Applicant submits that a prima facie case of obviousness has not been shown as the cited prior art relied on in the Official Action does not disclose, teach or suggest all of the features of the presently claimed subject matter. Applicant notes that as dependent claims necessarily recite all of the features of the independent claim from which they depend, the dependant claims of the present application are also asserted to be patentable at least by virtue of their direct or indirect dependency on claims 22 and 39 and also for the totality of features recited therein. Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the rejections.

***II. At page 4 of the Official Action, the Examiner rejected claims 22, 23, 32, 35 – 39 and 42 under 35 USC § 103(a) as being unpatentable over Australian Reference No. 54,127/73 to Harvey in view of the Sweet et al. patent.***

At page 4 of the Official Action, the Examiner rejected claims 22, 23, 32, 35 – 39 and 42 under 35 USC § 103(a) as being unpatentable over Australian Reference No. 54,127/73 to

Harvey (hereinafter referred to as “the Harvey reference”) in view of the Sweet et al. patent.

The arguments above with respect to the secondary Sweet et al. patent are incorporated herein. Applicant respectfully traverses this rejection since none of the additional references, taken alone or in combination, disclose, teach or suggest all of the elements of the presently claimed subject matter.

As required by *In re Wilson*, to establish a *prima facie* case of obviousness, the Examiner must establish that some suggestion or motivation to modify the references exists and that the prior art references teach or suggest all of the claim features. *Amgen, Inc. v. Chugai Pharm. Co.*, 18 USPQ2d 1016, 1023 (Fed. Cir. 1991); *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988); *In re Wilson*, 165 USPQ 494, 496 (CCPA 1970).

Applicant’s disclosed prior art is directed toward a prior art sprinkler. The Harvey reference describes a liquid spray device that has a plastic spinner mounted on a plastic bearing. However, neither the Harvey reference nor the Sweet et al. patent, alone or in combination with each other, discloses, teaches or suggest “a socket for receiving for rotation the axle, the socket having a bottom that abuts the tip of the axle” or “a hard element constituting at least a part of the bottom including the contact zone, the element comprising a harder material than the tip” as recited in present claim 22 and as similarly recited in present claim 39. As claims 23, 32, 35 – 38 and 42 depend either from claims 22 or 39, claims 23, 32, 35 – 38 and 42 are likewise asserted to be patentable over the cited prior art.

Applicant submits that none of the cited references, taken alone or together, renders the presently claimed subject matter obvious within the meaning of 35 U.S.C. §103(a). Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the outstanding rejections of all of the pending claims.

***III. At page 7 of the Official Action, the Examiner rejected claims 27, 28, 43 and 44 under 35 USC § 103(a) as being unpatentable the Harvey reference in view of the disclosed prior art and the Sweet et al. patent and further in view of British Reference No. 530,912 to Nagy.***

At page 7 of the Official Action, the Examiner rejected claims 27, 28, 43 and 44 under 35 USC § 103(a) as being unpatentable the Harvey reference in view of the disclosed prior art and the Sweet et al. patent and further in view of British Reference No. 530,912 to Nagy (hereinafter referred to as “the Nagy reference”).

The arguments above with respect to the disclosed prior art, the Harvey reference and the Sweet et al. patent are incorporated herein. Applicant respectfully traverses these rejections since none of the additional references, taken alone or in combination, discloses, teaches or suggests all of the elements of the presently claimed subject matter.

As required by *In re Wilson*, to establish a *prima facie* case of obviousness, the Examiner must establish that some suggestion or motivation to modify the references exists and that the prior art references teach or suggest all of the claim features. *Amgen, Inc. v. Chugai Pharm. Co.*, 18 USPQ2d 1016, 1023 (Fed. Cir. 1991); *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988); *In re Wilson*, 165 USPQ 494, 496 (CCPA 1970).

The Nagy reference is directed toward hard metal bearings. However, none of the cited references disclose, teach or suggest “a socket for receiving for rotation the axle, the socket having a bottom that abuts the tip of the axle” or “a hard element constituting at least a part of the bottom including the contact zone, the element comprising a harder material than the tip” as recited in present claim 22 and as similarly recited in present claim 39. As claims 27, 28, 43 and 44 depend either from claims 22 or 39, claims 27, 28, 43 and 44 are likewise asserted

to be patentable over the cited prior art.

Applicant submits that none of the cited references, taken alone or together, renders the presently claimed subject matter obvious within the meaning of 35 U.S.C. §103(a). Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the outstanding rejections of all of the pending claims.



***IV. At page 7 of the Official Action, the Examiner rejected claims 30 and 46 under 35 USC § 103(a) as being unpatentable over the disclosed prior art in view of Japanese Reference No. 62171515 to Yoshihiro and the Sweet et al. patent and further in view of U.S. Patent No. 6,658,366 to Yamasue et al.***

At page 7 of the Official Action, the Examiner rejected claims 30 and 46 under 35 USC § 103(a) as being unpatentable over the disclosed prior art in view of Japanese Reference No. 62171515 to Yoshihiro (hereinafter referred to as “the Yoshihiro reference”) and the Sweet et al. patent and further in view of U.S. Patent No. 6,658,366 to Yamasue et al. (hereinafter referred to as “the Yamasue et al. patent”).

The arguments above with respect to the secondary Sweet et al. patent and the Yoshihiro reference are incorporated herein. Applicant respectfully traverses these rejections since none of the additional references, taken alone or together, disclose, teach or suggest all of the elements of the presently claimed subject matter.

As required by *In re Wilson*, to establish a *prima facie* case of obviousness, the Examiner must establish that some suggestion or motivation to modify the references exists and that the prior art references teach or suggest all of the claim features. *Amgen, Inc. v. Chugai Pharm. Co.*, 18 USPQ2d 1016, 1023 (Fed. Cir. 1991); *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988); *In re Wilson*, 165 USPQ 494, 496 (CCPA 1970).

The Yamasue et al. patent describes a speed sensor that is attached to an automobile wheel. The Yamasue et al. patent is cited for its disclosure of a bearing made of glass. However, none of the cited references disclose, teach or suggest “a socket for receiving for rotation the axle, the socket having a bottom that abuts the tip of the axle” or “a hard element constituting at least a part of the bottom including the contact zone, the element comprising a harder material than the tip” as recited in present claim 22 and as similarly recited in present

claim 39. As claims 30 and 46 depend either from claims 22 or 39, claims 30 and 46 are likewise asserted to be patentable over the cited prior art.

Applicant submits that none of the cited references, taken alone or together, renders the presently claimed subject matter obvious within the meaning of 35 U.S.C. §103(a). Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the outstanding rejections of all of the pending claims.

***V. At page 8 of the Official Action, the Examiner rejected claims 40, 42 45 and 47 under 35 USC §103(a) as being unpatentable over the Harvey Reference in view of Applicant's Disclosure of the Prior Art in view of Japanese Reference No. 62171515 to Yoshihiro.***

At page 8 of the Official Action, the Examiner rejected claims 33 and 34 under 35 USC § 103(a) as being unpatentable over the disclosed Prior Art in view of the Yoshihiro reference and the Sweet et al. patent and further in view of European Reference No. EP 0743464 to De Filippis et al. (hereinafter referred to as "the De Filippis et al. reference).

The arguments above with respect to the disclosed Prior Art, the Sweet et al. patent and the Yoshihiro reference are incorporated herein. Applicant respectfully traverses these rejections since none of the additional references, taken alone or together, discloses, teaches, or suggests all of the elements of the presently claimed subject matter.

Applicant's disclosed prior art is directed toward a prior art sprinkler. The Harvey reference describes a liquid spray device that has a plastic spinner mounted on a plastic bearing. The Nagy reference is directed toward hard metal bearings. The Yamasue et al. patent describes a speed sensor that is attached to an automobile wheel. The Yamasue et al. patent is cited for its disclosure of a bearing made of glass. The De Filippis et al. reference

describes an axial bearing system. The Yoshihiro reference describes adding a ceramic coating to an end portion of a shaft that is contact with a steel or polyester bearing plate. The described ceramic coating is harder than the material of the shaft.

However, none of the cited tertiary references disclose, teach or suggest “a socket for receiving for rotation the axle, the socket having a bottom that abuts the tip of the axle” or “a hard element constituting at least a part of the bottom including the contact zone, the element comprising a harder material than the tip” as recited in present claim 22 and as similarly recited in present claim 39.

Applicant submits that none of the cited references, taken alone or together, reads on renders the presently claimed subject matter obvious within the meaning of 35 U.S.C. §103(a).

Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the outstanding rejections of all of the pending claims.

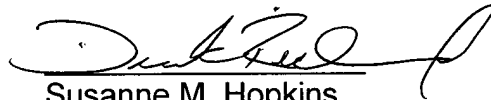
### CONCLUSION

Applicant asserts that the claims are in condition for immediate allowance and early notice to that effect is earnestly solicited. Should the Examiner deem that any further action by Applicant's undersigned representative is desirable and/or necessary, the Examiner is invited to telephone the undersigned at the number set forth below.

In the event that this paper is not timely filed, the Applicant petitions for an appropriate extension of time. Please charge any fee deficiency or credit any overpayment to Deposit Account No. 14-0112.

Respectfully submitted,

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